

What is claimed is:

- 1 1. A dielectric material composition, comprising a
2 metal oxide having a formula of:
3 $Y_{1-x}M^1_xMn_{1-y}M^2_yO_m$,
4 wherein
5 M^1 is Y, Ho, Er, Yb, Tm, or Lu;
6 M^2 is Ti, Zr, V, Mo, Mg, Cu, or Zn;
7 x is a number of 0 to 1;
8 y is a number of 0 to 1; and
9 m satisfies the principle of electrical neutrality for
10 the metal oxide.
- 1 2. The dielectric material composition as claimed in
2 claim 1, wherein M^1 is Y, Er, or Yb.
- 1 3. The dielectric material composition as claimed in
2 claim 2, wherein M^1 is Y.
- 1 4. The dielectric material composition as claimed in
2 claim 1, wherein M^2 is Ti, La, Ce, Cr, or V.
- 1 5. The dielectric material composition as claimed in
2 claim 4, wherein M^2 is Ti.
- 1 6. The dielectric material composition as claimed in
2 claim 1, wherein x is a number of 0 to 0.1.
- 1 7. The dielectric material composition as claimed in
2 claim 1, wherein y is a number of 0.35 to 0.65.

1 8. The dielectric material composition as claimed in
2 claim 1, wherein the metal oxide is $YMn_{1-y}Ti_yO$, $0.35 \leq y \leq$
3 0.65.

1 9. The dielectric material composition as claimed in
2 claim 1, wherein the dielectric material composition is
3 manufactured from a method of solid state reaction.

1 10. The dielectric material composition as claimed in
2 claim 1, wherein the dielectric material composition is
3 manufactured from a method of liquid phase reaction.

1 11. The dielectric material composition as claimed in
2 claim 1, wherein the dielectric material composition is in a
3 bulk form.

1 12. The dielectric material composition as claimed in
2 claim 1, wherein the dielectric material composition is in a
3 film form.

1 13. The dielectric material composition as claimed in
2 claim 1, wherein the dielectric constant of the dielectric
3 material composition is more than 29.

1 14. The dielectric material composition as claimed in
2 claim 13, wherein the dielectric constant of the dielectric
3 material composition is more than 350.

1 15. The dielectric material composition as claimed in
2 claim 1, wherein the quality factor of the dielectric
3 material composition is more than 450.

1 16. The dielectric material composition as claimed in
2' claim 15, wherein the quality factor of the dielectric
3 material composition is more than 650.